STATE OF NEVADA
Department of Administration
Division of Human Resource Management

CLASS SPECIFICATION

TITLE	GRADE	EEO-4	CODE
COMMUNICATIONS SYSTEMS SUPERVISOR	**37**	**A**	**6.976**
COMMUNICATIONS SYSTEMS SPECIALIST II	**35**	**C**	**6.977**
COMMUNICATIONS SYSTEMS SPECIALIST I	**33**	**C**	**6.973**

SERIES CONCEPT

Communications Systems Specialists perform specialized electronic technician work involving the fabrication, installation, maintenance, repair and modification of 24-hour communications systems in a geographical area or on a statewide basis. This may include two-way radio and microwave equipment, mountaintop base stations, power systems, towers, antennas, multiple station/operator radio control console systems, data, voice, and data terminals.

Repair, align and troubleshoot radio frequency (RF) components, units, and systems, microwave, radios and other ancillary equipment making frequency, modulation, distortion, noise and power measurements; use and maintain test equipment such as oscilloscopes, voltmeters, microwave link analyzers, spectrum analyzers, baseband analyzers, radio frequency transmission reflectrometer test sets, sweep generators and deviation calibrators, tuning and adjusting tools, microcomputers and microprocessor controlled test/status/alarm equipment.

Maintain RF systems at peak efficiency using advanced troubleshooting skills and electronics theory at a systems engineering level.

Implement and monitor an integrated geographically dispersed radio communications processing network comprised of multiple hardware platforms, information resources, communications protocols and physical network topologies for an agency's district or statewide trunked radio communications system.

Install, align and troubleshoot other communications equipment such as frequency and digital multiplex equipment, digital encoding equipment, analog and digital video systems, radio control, switching equipment, multiple station/operator radio control console systems, multiple channel information logging recorders, data terminals and printing systems, scanning monitor receivers, receiver voting systems, grounding system and surge protection equipment using test equipment and understanding of schematics.

Install, repair and maintain agency mountaintop base station radios, microwave and radio systems, power distribution systems, antenna systems, towers, lighting systems and primary and back-up power generation systems to create remote communication sites to cover a geographical area and radio communications network.

Install copper and fiber optic cabling and cable distribution systems in division facilities enabling radio, telephone and data systems to be inter-connected and distributed as required.

Perform electrical and mechanical installation, maintenance and repairs on emergency vehicle equipment and maintenance vehicles including electronic siren and public address amplifiers, emergency lights and light control systems, antenna systems, data terminals, printers, data multiplexers, radio control consoles, logging recorders, radar sets, mobile and portable radios to ensure reliability of public safety and maintenance vehicles, communications equipment and networks.

SERIES CONCEPT (cont'd)

Conduct research and develop custom circuit boards and sub-systems to provide necessary system components which are unavailable from commercial sources or which require modification for use with existing components and communications system.

Provide on-site direction and assistance to lower level Communication Systems Specialists to facilitate reliable, efficient, cost effective service to the agency.

Coordinate with other communications entities including federal, State and private agencies in the repair, maintenance and modification of the agency's communications system.

Review and analyze system utilization statistics, user training needs, hardware, software and environmental needs.

Maintain shop inventory of parts and equipment and maintain replacement and repair stock by researching part numbers, descriptions, and prices.

Prepare and maintain documentation of work completed, files for the system and vendor information for the assigned work area.

Train equipment operators in the use of communications equipment.

Perform related duties as assigned.

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CLASS CONCEPTS

Communications Systems Supervisor: Under general direction, incumbents perform the full range of duties in the series concept, supervise a statewide staff of Communications Systems Specialists, and provide systems engineering design, research and development of an agency's statewide communications system.

Conduct communications systems engineering including frequency availability, path analysis, coverage area charts, site layout, installation and interconnection methods and site power source and sizing; develop and implement technical parameters and standard practices for the installation, maintenance and repair of communication equipment; and ensure the integrity of the communications system is maintained.

Perform needs analysis concerning a statewide communications system; write detailed plans and other documentation to meet identified needs including annual work plans and broad system improvements and strategy; analyze existing system configuration and proposed improvements to ensure compatibility, reliability, efficiency and cost effectiveness.

Assign, direct and evaluate the work of assigned staff; interview, select and hire personnel; delegate responsibility to appropriate levels; develop and communicate work performance standards consistent with principles of effective management; identify training needs and provide for appropriate training opportunities based on organizational requirements and within budget constraints.

Communications Systems Specialist II: Under direction, at the journey level, incumbents perform the full range of duties in the series concept and in addition, may act as a leadworker for lower level Communications Systems Specialists and other technical staff.

Assist the Communications Systems Supervisor in performing systems engineering and design, research and development including frequency availability, path analysis, coverage area charts, site layout, installation

CLASS CONCEPTS (cont'd)

Communications Systems Specialist II (cont'd)
methods, interconnection methods, site power sizing and determination of power source types for each additional site or site to be modified as well as the repair and maintenance of a statewide communication system.

Communications Systems Specialist I: Under general supervision of a higher-level Communications Systems Specialist or Supervisor, incumbents either:

1) perform routine installation, repair and maintenance of the agency's communications equipment below the journey level. Progression to the journey level is not automatic, and positions may be permanently allocated to this level; or

2) function in a training capacity and learn to perform the duties described in the series concept. Progression to the next level may occur upon meeting the minimum qualifications and with the approval of the appointing authority.

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MINIMUM QUALIFICATIONS

SPECIAL REQUIREMENTS:

* Pursuant to NRS 284.4066, some positions in this series have been identified as affecting public safety. Persons offered employment in these positions, must submit to a pre-employment screening for controlled substances.
* Some positions require extensive travel.
* Some positions require on-call availability and emergency response during non-working hours including holidays.
* Work is performed during inclement weather conditions and includes climbing towers and hiking into remote site areas as required.
* Applicants must submit proof of certification of competency issued by one of the following: National Association of Radio Telecommunication Engineers (NARTE), Association of Public Safety Communications Officers (APCO), or National Association of Business and Educational Radio (NABER); or possess a Federal Communication Commission (FCC) radio-telephone license.
* A valid driver's license is required at time of appointment and as a condition of continuing employment.

INFORMATIONAL NOTE:

* Communications Systems Specialist I applicants must submit proof of certification of competency as specified above within six months of employment.

COMMUNICATIONS SYSTEMS SUPERVISOR

EDUCATION AND EXPERIENCE: Bachelor's degree in electrical engineering, electronics technology or closely related field and three years of technical electronics experience, two years of which included installing, maintaining and repairing communications and ancillary equipment; **OR** an associate's degree in electronics technology and four years of technical electronics experience, two years of which included experience installing, maintaining and repairing communications and ancillary equipment; **OR** an equivalent combination of education and experience; **OR** one year of experience as a Communications Systems Specialist II in Nevada State service. *(See Special Requirements and Informational Note)*

MINIMUM QUALIFICATIONS (cont'd)

COMMUNICATIONS SYSTEMS SUPERVISOR (cont'd)

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):
Working knowledge of: FCC licensing procedures including frequency coordination; communications system design; systems engineering to include needs analysis, system requirements and the development and implementation of solutions; correct English grammar, usage, punctuation and spelling. **Ability to:** establish and maintain effective working relationships with other State agencies, equipment suppliers, employees and the public; plan and set project priorities; motivate and direct subordinates; organize and coordinate the work of others. **Skill in:** oral and written communications; *and all knowledge, skills and abilities required at the lower levels.*

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):
Working knowledge of: State Rules for Personnel Administration; State regulatory requirements applicable to communications; principles and practices of supervision and training. **Ability to:** manage projects such as site development, system upgrades and modifications; train, supervise and evaluate the performance of assigned staff; represent the agency regarding its communications system; purchase parts and supplies according to established policies and regulations. **Skill in:** assessing technical and administrative issues, analyzing potential solutions and reaching sound decisions in a timely manner.

COMMUNICATION SYSTEMS SPECIALIST II

EDUCATION AND EXPERIENCE: Associate's degree in electronics technology or equivalent with course work in algebra, trigonometry, schematics, electronics laboratories, corrective maintenance procedures and technical writing courses and three years of technical electronics experience, one year of which included installing, maintaining and repairing communications and ancillary equipment; **OR** completion of trade school, military or college training to the certificate level in electronics technology which included theory of communication technology and three years of technical electronics experience, one year of which included installing, maintaining and repairing communications and ancillary equipment; **OR** an equivalent combination of education and experience; **OR** one year of experience as a Communications Systems Specialist I in Nevada State service. *(See Special Requirements and Informational Note)*

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):
Detailed knowledge of: math including algebra and trigonometry; microwave, radio and antenna systems (transmitters, receivers, repeater stations, transceivers, mobile and portable radios and base station dispatch consoles); telephone systems; standby power including generators, uninterruptible power supplies, and solar electric systems; processes and procedures used in circuit analysis and corrective diagnosis for repair and troubleshooting communications equipment. **Working knowledge of:** calibration principles and techniques; federal communications rules and regulations. **Ability to:** coordinate and implement communications site development and improvement projects; provide training and direction to lower level technical staff; supervise the work of outside contractors; prepare technical and analytical reports; analyze communications protocols; and *all knowledge, skills and abilities required at the lower level.*

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):
Detailed knowledge of: theory of communications technology as applied to specialized communications networks. **Ability to:** use word processing, spreadsheet and database management software.

COMMUNICATIONS SYSTEMS SPECIALIST I

EDUCATION AND EXPERIENCE: Associate's degree or equivalent with course work in algebra, trigonometry, schematics and electronics laboratories and two years of technical experience in the installation, maintenance and repair of electronic equipment; **OR** completion of trade school, military or

MINIMUM QUALIFICATIONS (cont'd)

COMMUNICATIONS SYSTEMS SPECIALIST I (cont'd)

EDUCATION AND EXPERIENCE (cont'd)
college training to the certificate level in electronics technology which included theory of communication technology and two years of technical electronics experience as described above; **OR** an equivalent combination of education and experience. *(See Special Requirements and Informational Note)*

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):
Detailed knowledge of: electronics including AC/DC principles, pulse circuits, solid state integrated circuit devices and microprocessors; microwave and multiplex principles and theories; analog and digital electronics. **Working knowledge of:** math including algebra and trigonometry; public address systems; processes and procedures used in circuit analysis and corrective diagnosis for the repair and troubleshooting of communications equipment. **General knowledge of:** basic calibration principles and techniques. **Ability to:** operate a variety of electronic test equipment that measures time, frequency, phase, amplitude and power; install, repair and maintain communications and ancillary equipment; operate a variety of hand and power tools; read and understand complex schematics and understand the operations of components, units, and systems; work independently and as a team member; write reports and documentation in a clear and concise manner.

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):
Working knowledge of: electronics technology as applied to specialized communications networks; microwave, radio and antenna systems including transmitters, receivers, repeater stations, transceivers, mobile and portable radios, and base station dispatch consoles; voice and data communications servers; standby power including generator, uninterruptible power supply and solar electric systems; analog and digital video; copper and fiber optic data and voice cabling distribution systems. **General knowledge of:** federal communications rules and regulations.

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards for positions assigned to this class.

	6.976	6.977	6.973
ESTABLISHED:	12/13/88R	12/13/88R	7/1/93P
	10/91/90PC	10/19/90PC	8/31/92PC
REVISED:	7/1/93P	7/1/93P	
	8/31/92PC	8/31/92PC	
REVISED:	9/19/03PC	9/19/03PC	9/19/03PC
REVISED:	5/12/06PC	5/12/06PC	5/12/06PC
REVISED:	5/9/12UC	5/9/12UC	5/9/12UC